



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,535	02/26/2004	Roland Reinhard Rick	000259D1	9482
23596 7590 04/30/2009 QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121				
EXAMINER BURD, KEVIN MICHAEL				
ART UNIT		PAPER NUMBER		
2611				
NOTIFICATION DATE		DELIVERY MODE		
04/30/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com

kascanla@qualcomm.com

nanm@qualcomm.com

### Office Action Summary

**Application No.**

10/789,535

**Applicant(s)**

RICK ET AL.

**Examiner**

Kevin M. Burd

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

1. This office action, in response to the request for continued examination (RCE) and the amendment filed 3/26/2009, is a final office action.

***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/26/2009 has been entered.
3. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Response to Arguments***

4. Applicant's arguments filed 3/26/2009 have been fully considered but they are not persuasive. Applicant has amended the independent claims by adding the limitation of the second data despreading sequence is different from the first data despreading sequence. However, as stated in the previous rejection of the claims, "each finger of Sourour will be replaced with the finger of figure 2 of the instant application's disclosed prior art." The instant application's disclosed prior art states the CDMA modulation technique is well known in the art (paragraph 0002). Multiple users are communicated in code division multiple access systems. Each user will be spread by a unique spreading code and the spread signals will be transmitted. A receiver will receive the spread user signals and will correlate the received signals with a unique despreading signal to recover the corresponding user signal. This process will be repeated for each user signal to be recovered in the receiver. This process is inherent in CDMA systems. For this reason and the reasons stated in the previous office action, the rejections of the claims are maintained. If this amendment had been filed after final office action, it would have been entered and the previous rejection of the claims maintained since the

combination discloses all the claimed limitations. For this reason, a first action final office action is issued.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sourour (US 6,865,218) in view of the instant application's disclosed prior art (specifically figures 2 and 3).

Regarding claims 1, 5, 10, 14 and 20, Sourour discloses a method of using an offset time tracking apparatus in a multi-path spacing environment. The CDMA receiver comprises first and second RAKE receivers and the RAKE receivers comprise a plurality of individual RAKE fingers (abstract). The receiver is shown in figures 7 and 7A. Each of the primary RAKE fingers 210 is assigned one of the propagation paths of interest and each primary RAKE finger 210 correlates the received CDMA signal at a time offset corresponding to a path delay associated with the assigned propagation path of that primary RAKE finger 210 (column 8, lines 50-55). Figure 8 discloses the time offsets for each of the RAKE fingers. The second and third primary RAKE fingers 210 correlate the same received CDMA signal at relative time offsets, corresponding to paths 2 and 3 (column 9, lines 7-17).

Sourour discloses each of the RAKE fingers 210 contain a different initial time offset but does not disclose the specifically claimed components of the RAKE finger recited in the claim. The instant application's disclosed prior art discloses a block diagram of a typical RAKE receiver in figure 2. For the purposes of clarity, only one finger of the receiver is shown (paragraph 0006). Each of the fingers discloses demodulating a modulated signal of the plurality of modulated signals into a demodulated signal in response to a time offset for that finger, a data despreading sequence and a pilot estimate (figure 2 and paragraphs 0006-0012). An error signal is generated in response to sampling of a pilot signal, associated with the modulated signal, a predetermined time prior to the offset and a predetermined time subsequent to the offset in each finger (figure 2 and paragraphs 0006-0012). An updated offset in response to the time error signal is generated (figure 2 and paragraphs 0006-0012). The instant application's disclosed prior art discloses the base station transmitting to the receiver in figure 3. It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize well known, typical RAKE receivers. This reduces cost and complexity of transmission systems and allows multiple systems to be compatible if the same components are used for each system. Each finger of Sourour will be replaced with the finger of figure 2 of the instant applications disclosed prior art.

Regarding claim 2, Sourour discloses combining the signals of the primary fingers 210 in the summer 212 of figure 7.

Regarding claims 3, 4 and 11, Sourour discloses the signals are combined in summer 212 and the signals are offset as shown in figure 8.

Regarding claim 6, the instant application's disclosed prior art shows the time tracking loop 275 will update the delay for each finger (figure 2).

Regarding claims 12, 13, 15 and 16, the instant application's disclosed prior art discloses means for determining a prior energy level of the demodulated signal a predetermined time prior to the first timing offset for each finger (figure 2). A means for determining a subsequent energy level of the demodulated signal a predetermined time subsequent to the timing offset for each finger is also disclosed. The prior and subsequent energy levels are combined to generate the error signal for each finger is shown in figure 2.

Regarding claims 7 and 17, Sourour discloses a method of using an offset time tracking apparatus in a multi-path spacing environment. The CDMA receiver comprises first and second RAKE receivers and the RAKE receivers comprise a plurality of individual RAKE fingers (abstract). The receiver is shown in figures 7 and 7A. Each of the primary RAKE fingers 210 is assigned one of the propagation paths of interest and each primary RAKE finger 210 correlates the received CDMA signal at a time offset corresponding to a path delay associated with the assigned propagation path of that primary RAKE finger 210 (column 8, lines 50-55). Figure 8 discloses the time offsets for each of the RAKE fingers. The second and third primary RAKE fingers 210 correlate the same received CDMA signal at relative time offsets, corresponding to paths 2 and 3 (column 9, lines 7-17).

Sourour discloses each of the RAKE fingers 210 contain a different initial time offset but does not disclose the specifically claimed components of the RAKE finger

recited in the claim. The instant application's disclosed prior art discloses a block diagram of a typical RAKE receiver in figure 2. For the purposes of clarity, only one finger of the receiver is shown (paragraph 0006). Each of the fingers discloses demodulating a modulated signal of the plurality of modulated signals into a demodulated signal in response to a time offset for that finger (figure 2 and paragraphs 0006-0012). Means for determining a prior energy level of the demodulated signal a predetermined time prior to the first timing offset for each finger is disclosed (figure 2). A means for determining a subsequent energy level of the demodulated signal a predetermined time subsequent to the timing offset for each finger is also disclosed. The prior and subsequent energy levels are combined to generate the error signal for each finger is shown in figure 2. An updated offset in response to the time error signal is generated (figure 2 and paragraphs 0006-0012). The instant application's disclosed prior art discloses the base station transmitting to the receiver in figure 3. It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize well known, typical RAKE receivers. This reduces cost and complexity of transmission systems and allows multiple systems to be compatible if the same components are used for each system. Each finger of Sourour will be replaced with the finger of figure 2 of the instant applications disclosed prior art.

Regarding claim 8, figure 2 of the instant application's disclosed prior art shows the predetermined time prior and subsequent to the offset is half a chip time.

Regarding claim 9, Sourour discloses combining the signals of the primary fingers 210 in the summer 212 of figure 7.



Regarding claims 18 and 19, the instant application's disclosed prior art discloses in the WCDMA standard, despread sequences have a special relationship over the correlation duration of 512 chips this relationship is expressed in paragraph 0069.

### ***Conclusion***

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin M. Burd/  
Primary Examiner, Art Unit 2611  
4/24/2009